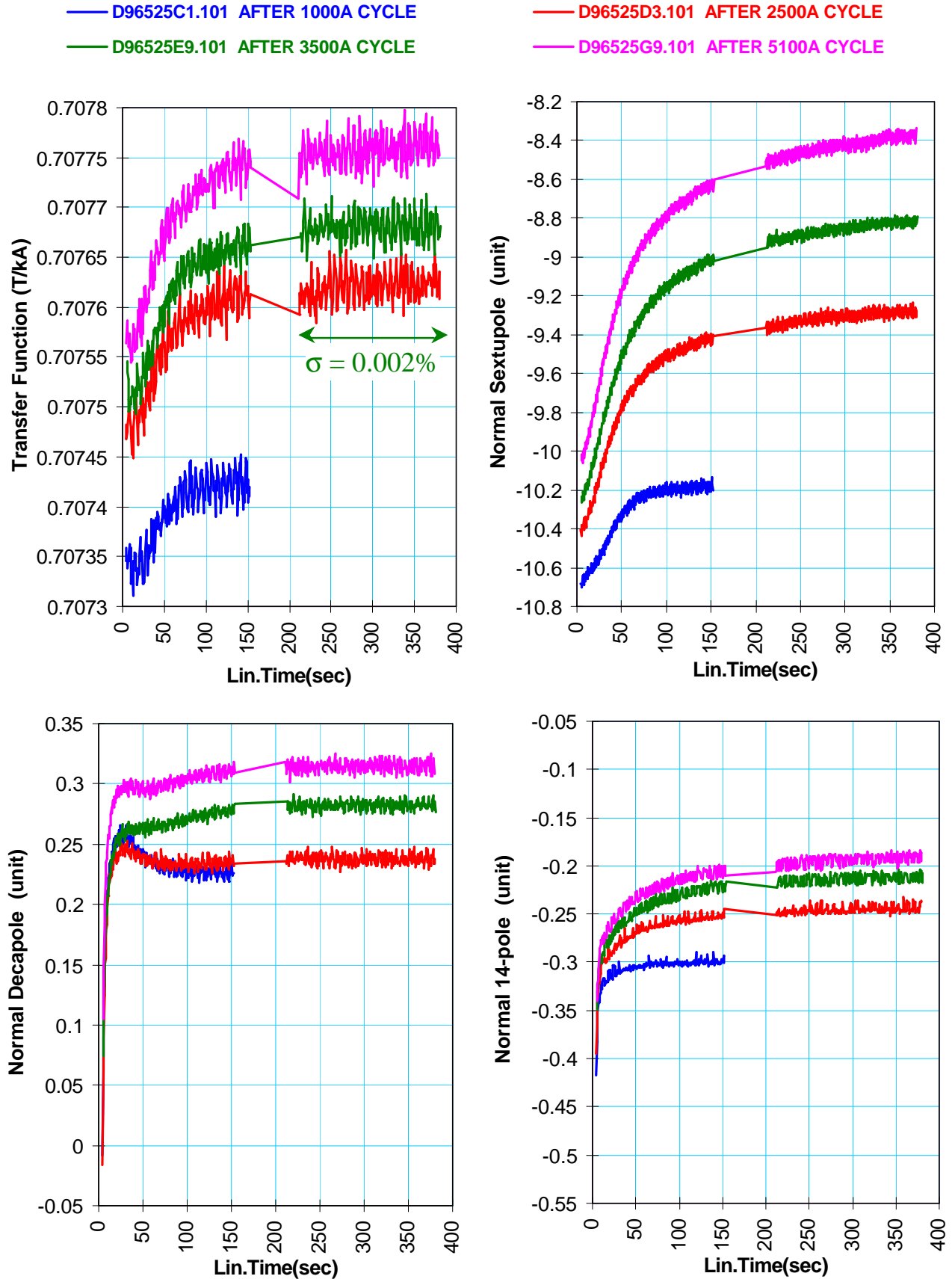


Time Decay at 470A (15% below Injection) in D96525 After Cycles to Various Currents

- Measurements are in the straight section with a 1 meter long coil.
- Measurements are with a time resolution of ~0.66 second.
- AC cycles done from 25 Amps to X Amps and back at 60 A/s, where X = 1000 A, 2500 A, 3500 A, or 5100 A. The magnet was quenched before the 1000 A AC cycle.
- Current ramped from 25A to 470A at 40 A/s and then held constant.
- Smooth current ramp profile with quadratic time dependence at the beginning and the end of the ramp.
- Measurements made during the ramp (40 A/s) from 25 A to 470 A, as well as for about 150 seconds at the 470 A flat top. For the 2500 A, 3500 A and 5100 A cycles, the measurements at flat top were extended to a total of ~380 seconds, with a “dead period” of about 58 seconds.
- Time $t = 0$ is defined as the time when the magnet current has reached 450 A.
- For each value of maximum current, the time decay was measured at least 4 times. Data reproducibility was good.
- Transfer function values at steady state increase monotonically with the maximum current used for the AC cycle. The steady state value of transfer function at 470 A after AC cycle to 5100 A is 0.70776 T/kA, and is 0.70768 T/kA (–0.011%) after 3500 A cycle, 0.70762 T/kA (–0.019%) after 2500 A cycle and 0.70742 T/kA (–0.047%) after the 1000 A cycle. Typical noise in measurement of transfer function in these runs is at 0.002% level. This noise is about a factor of 5 smaller than in similar measurements in QR7109.

Time Decay at 470 A in D96525: Allowed Terms



Time Decay at 470 A in D96525: Unallowed Terms

